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IL-2 as an adjuvant for foot-and-mouth disease vaccine through the generation of Th1, Th2 as well as T follicular helper cells

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IL-2 is one of the most extensively used adjuvants for vaccination to stimulate the proliferation and differentiation of effector T cells. Follicular helper T cells (Tfh cells) are a new CD4+T cell subset that specializes in helping formation of germinal center (GC) and, consequently, mediated the T-dependent humoral immunity response. However, it is uncertain whether IL-2 as an adjuvant may modulate the Tfh cells immune response. In this study, we investigated the effects of IL-2 adjuvant for adenovirus-vectored FMD vaccine on production of FMDV VP1 specific IgG, IgG1 and IgG2a, secretion of IFN-γ, IL-4 and IL-21 in serum, expression of Bcl-6 mRNA from mice after immunization. Further, the generation of Tfh cells, GC B cells and formation of GC from mice after immunization were explored. The data showed that IL-2 as an adjuvant for adenovirus-vectored FMD vaccineenhanced both levels of antibodies and secretion of IFN-γ,IL-4 and IL-21 in serum, which revealed the potent adjuvant activity of IL-2 could enhance the generation of Th1 (IFN-γ) and Th2 (IL-4), as well as Tfh (IL-21) cells. The further effects of IL-2 on Tfh cells were detected and showedthat IL-2 as an adjuvant for adenovirus-vectored FMD vaccine increased the generation of Tfh cells and the expression of Bcl-6 mRNA, additionally, IL-2 as an adjuvant for adenovirus-vectored FMD vaccine substantially increased the generation of GC B cells and formation of GCs, which revealed that IL-2 as an adjuvant for vaccination induced generation of Tfh cells and then mediated T-dependent humoral immunity response.

Biography

Chunxia Su has completed her PhD at the age of 30 years from Nanjing Agriculture University. She has published more than 10 papers in reputed journals.

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